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EXAMINER	
GILES, EBONI N	

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/526,092	NIELSEN ET AL.	
	Examiner	Art Unit	
	EBONI GILES	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 04 May 2010.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-30 and 32-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-30 and 32-36 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 23 February 2005 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to amendment filed on 5/4/10. Claims 1-30, 32-36 are pending with Claims 1, 22 and 30 being further amended.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 22 and 30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-15, 18-29, 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication 2003/0231607 to Scanlon et al ("Scanlon") in view of U.S. Patent Publication 2003/028685 to Mahany et al ("Mahany") and in further view of U.S. Patent 7,231,221 to Assarsson et al ("Assarsson").

As to Claim 1, Scanlon discloses "a method of controlling operation of at least one transmitter and/or one receiver in at least one node of a communication system, for transmission of signals,"(¶ 0007);

Scanlon further discloses "transmitting a signal at a time indicated by a previous signal transmitted from the transmitted and received by the receiver," (¶

0035) where the next slot pointer extracted from the header of a previous downlink packet indicates to the slave when to expect the next downlink.

Scanlon further discloses “the transmitter signal including a message frame having a message part indicative of a time of transmission for a later signal,” (¶ 0022, 0024, 0025, Figs. 3 & 5) where the master embeds a preferably 6-bit resynchronization pointer (RP) in the pointer field of each downlink (master-slave) packet along with a preferably 6-bit Next Slot Pointer (NSP). The resynchronization pointer portion of the message indicates the time of transmission of a later signal as recited;

Scanlon further discloses “registering by the at least one receiver the message part indicative of the time of transmission for the later signal,” where the superframe comprises 31 consecutive pairs of application data carrying master-slave slots, followed by a scheduled network registration or broadcast beacon slot…The registration beacon slot contains a range of information including slot scheduling data and the master’s ID located within the access code field (¶ 0025) and further teaches that the slot scheduling data comprises a list of registered slave identities as well as respective next slot pointers for each registered slave;

Scanlon does not expressly disclose transmitting a signal from a transmitter to a receiver on a non-periodical basis.

Assarsson discloses “transmitting a signal from a transmitter to a receiver on a non-periodical basis,” (Col. 5, lines 37-45; Col. 6, lines 4-13, 35-51; Col. 3, lines 4-16; Fig. 3) where a beacon message can serve three purposes: it

provides a timing reference for terminals (so they need to wake up only when the beacon message transmission is happening, thereby saving power); it signals one or more terminals that data is waiting in the controller (so other terminals may enter a sleep mode as quick as possible); and it enables the terminals to request access to the channel. Terminals having the same latency requirements are collected in the same beacon group, and each beacon group is served by its own beacon, which does not necessarily occur at fixed intervals. All beacons are transmitted on the same communication channel but at different times. Group A may include two terminals having different downlink requirements, in which case one terminal need not wake up for every beacon transmission intended for Group A. In FIG. 3, one Group A terminal 320 wakes up at every beacon transmission belonging to its group as indicated by the trace 320, and thus the uplink and downlink latencies are identical for this terminal. In contrast, another Group A terminal 325 wakes up only every two beacon transmissions intended for its group as indicated by the trace 325. When the terminal 325 has data to send in the uplink, it can of course choose to wake up at any beacon of group A. Therefore, the alternative scenario where the terminal can choose to wake up at any beacon of group A illustrates the irregularity of beacon transmission (i.e. non-periodic). Figure 3 further illustrates that beacon messages corresponding to different beacon groups may be broadcast at staggered time intervals. Further, the beacon messages provide timing references for the terminal (i.e. receiver)

and signal that data is waiting in the control station which reads on the claimed time indicated by a previous signal transmitted from the transmitter and receiver.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of controlling operation of at least one transmitter or receiver of Scanlon with transmitting a signal on a non-periodical basis of Assarsson. The suggestion/motivation would have been in order to extend the battery life of the terminals by operating in low-power mode (Col. 2, lines 42-43).

Scanlon or Sugar do not expressly disclose facilitating a transition of one of the at least one transmitter, the at least one receiver or both the transmitter and the receiver from and into a power saving state when no signal is being conveyed.

Mahany does expressly disclose "facilitating a transition of one of the at least one transmitter, the at least one receiver or both the transmitter and the receiver from and into a power saving state when no signal is being conveyed," (¶ 0054, 0061, 0064, Figs. 6a, 6b) where the master and slave are designed to provide for a low power mode or sleep mode during periods when no communication is desired.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of controlling operation of at least one transmitter or receiver of Scanlon and Assarsson with facilitating a transition into a power saving mode of Mahany. The suggestion/motivation would have been in

order to maintain connectivity between devices on networks which have different operating parameters while limiting the power drain of battery powered devices (Mahany, ¶ 0015).

As to Claim 2, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 1.

Scanlon teaches that "the message part indicative of the time of transmission for a later signal relates to the time of transmission for a following dataframe to be transmitted to the receiver," where the master downlink packet includes an RP (resynchronization pointer) of value 61 indicating the next registration beacon will occur in 61 time slots, but it will also indicate the number of slots the slave must wait for its next master-to-slave packet (¶ 0033).

Claim 3 is drawn to similar limitations as claimed in Claim 2. The claim recites a period of time following the transmitter signal where the rejection cited that the RP is provided a value that indicates the number of time slots required prior to receiving an additional data frame; and therefore, it is rejected for the same reasons of obviousness used above.

As to Claim 4, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 1.

Scanlon teaches that "the message part indicative of the time of transmission relates to a point of time relating to a timing reference established at least one of the nodes," where the master determines packet scheduling by including a next slot pointer (NSP) both in the pointer field of each downlink

packet and in the broadcast beacon information…The slave n, will be provided with an NSP of value 1 during the first registration beacon regardless of any NSP it may have been provided in the previous superframe. The slave then wakes up one slot later to receive a master downlink packet (¶ 0033) where the NSP serves as a timing reference for the slave to receive the next data frame.

As to Claim 5, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 1.

Scanlon and Assarsson do not expressly disclose bringing the transmitter into a power conserving mode after transmission of the transmitter signal.

Mahany does expressly teach " bringing the transmitter into a power conserving mode after transmission of the transmitter signal," where the master device periodically sends an idle sense message, waits a time period, and enters a power conserving mode during a time period (¶ 0066, Fig. 6c, elements 205, 231, 233). In addition, the same motivation is used as in the rejection of Claim 1.

As to Claim 6, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 5.

Scanlon and Assarsson do not expressly disclose controlling the transmitter to wait a predetermined time for a response from the receiver, and if no response is received, retransmitting the transmitter signal.

Mahany does expressly disclose “controlling the transmitter to wait a predetermined time for a response from the receiver, and if no response is received, retransmitting the transmitter signal,” where before transmitting an idle

sense message, the master listens to determine if the channel is idle. If the channel is idle, the master transmits an idle sense message and then waits a time period to determine if any devices desire communication (¶ 0064, Fig. 6b, elements 205, 231, 233). In addition, the same motivation is used as in the rejection of Claim 5.

As to Claim 7, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 6.

Scanlon discloses "controlling the transmitter to retransmit the transmitter signal a predetermined number of times, if no response is received," where the NSP for slave 1 is set to zero in a downlink packet, it indicates to the slave not to sleep for the next slot and so to keep listening to master downlink packets...The master transmits packets during three sequential time slots before allowing slave 1 to respond. In the third packet, the NSP value is 57 so causing slave 1 to wait until almost the end of the superframe before receiving another master packet (¶ 0036).

As to Claim 8, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 5.

Scanlon and Assarsson do not expressly disclose that the transmitter is configured to be brought into normal operating mode at or before the time of transmission indicated by the message part.

Mahany does expressly disclose " the transmitter is configured to be brought into normal operating mode at or before the time of transmission

indicated by the message part," where before transmitting an idle sense message, the master listens to determine if the channel is idle. If the channel is idle, the master transmits an idle sense message and then waits a time period to determine if any devices desire communication...after sending or receiving data during the time period, the master device enters a power conserving mode during the time period (¶ 0064-0065) hence the master (transmitter) is only activated or transmitting when reception is expected. In addition, the same motivation is used as in the rejection of Claim 5.

As to Claim 9, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 1.

Scanlon discloses "bringing the receiver into a power conserving mode, after having received the transmitter signal," where the slave activates its receiver hardware and listens to any downlink packet transmitted from the master...the slave extracts the RP from the packet header before entering low-power sleep mode until the next broadcast beacon (¶ 0030).

As to Claim 10, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 9.

Scanlon and Assarsson do not expressly disclose transmitting a confirmation signal from the receiver after having received the signal from the transmitter, waiting in a receive mode for a retransmission from the transmitter.

Mahany does expressly teach "transmitting a confirmation signal from the receiver after having received the signal from the transmitter, waiting in a receive

mode for a retransmission from the transmitter," where the slave activates again during a time period to monitor the next idle sense message, it determines from a "request to send" type message from the master that the master has data for transmission to the slave. The slave responds by sending a "clear to send" type message during the time period and stays activated in order to receive transmission of the data. The master is thus able to transmit the data to the slave during a time period. Once the data is received by the slave at the end of the time period, the slave again enters a power conserving mode during a time period and activates again during the time period to monitor the next idle sense message (¶ 0061, Fig 6a, elements 217, 219, 221, 223, 225) where the confirmation signal is the "clear to send" message from the slave once determining that the master has data for transmission.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of controlling a transmitter and receiver of Scanlon and Assarsson with the transmitting a confirmation signal from the receiver of Mahany. The suggestion/motivation would have been in order to synchronize to the master device so that the slave may enter a power conserving mode and still monitor the idle sense messages of the master to determine if the master requires servicing (Mahany, ¶ 0061).

As to Claim 11, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 10.

Scanlon discloses “the receiver is configured to wait in the receive mode for a period of time corresponding to at least a transmission slot for the transmitter before entering the power conserving mode," where the NSP for slave 1 is set to zero in a downlink packet, it indicates to the slave not to sleep for the next slot and so to keep listening to master downlink packets. In the example, the master transmits packets during three sequential time slots before allowing slave 1 to respond (¶ 0036).

As to Claim 12, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 9.

Scanlon and Assarsson do not expressly disclose that the receiver is configured to be brought into normal operating mode at or before the time of transmission indicated by the message part.

Mahany does expressly teach that “the receiver is configured to be brought into normal operating mode at or before the time of transmission indicated by the message part," where When the slave activates again during a time period 217 to monitor the next idle sense message, it determines from a "request to send" type message from the master that the master has data for transmission to the slave. The slave responds by sending a "clear to send" type message during the time period 217 and stays activated in order to receive transmission of the data (¶ 0061).

As to Claim 13, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 1.

Scanlon and Assarsson do not expressly disclose resuming synchronization when the receiver has not received the time indicative message part or when the transmitter has not received confirmation from the receiver of receipt of the time indicative message part.

Mahany does expressly teach "resuming synchronization when the receiver has not received the time indicative message part or when the transmitter has not received confirmation from the receiver of receipt of the time indicative message part," where The slave device thereafter initiates a binding protocol to attempt to regain synchronization with the master. While two time periods (241 and 245) are shown, the slave may initiate such a protocol after any number of unsuccessful attempts to locate an idle sense message. With this protocol, the slave stays active for a time period 247, which is equal to the time period from one idle sense message to the next, in an attempt to locate a next idle sense message. If the slave is again unsuccessful, it may stay active until it locates an idle sense message from the master (¶ 0067, Fig. 6c). In addition, the same motivation is used as in the rejection of Claim 1.

As to Claim 14, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 13.

Scanlon and Assarsson do not expressly disclose altering the operating mode of the transmitter until a communication has been established with the receiver, and resuming normal operating mode thereafter.

Mahany does expressly teach “altering the operating mode of the transmitter until a communication has been established with the receiver, and resuming normal operating mode thereafter,” where before transmitting an idle sense message, the master listens to determine if the channel is idle. If the channel is idle, the master transmits an idle sense message 205 and then waits a time period 231 to determine if any devices desire communication. If no communication is desired, the master enters a power conserving mode during a time period 233 before activating again to listen to the channel. If the channel is not idle, the master does not send the idle sense message and enters a power saving mode for a time period 235 before activating again to listen to the channel (¶0064, Fig. 6b) and further discloses that after sending or receiving data during the time period 219, the master device enters a power conserving mode during the time period 237 (¶ 0065, Fig. 6b). In addition, the same motivation is used as in the rejection of Claim 13.

As to Claim 15, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 14.

Scanlon discloses “altering the operating mode of the transmitter unit to a long preamble mode,” where the master 16' embeds a preferably 6-bit resynchronisation pointer (RP) in the pointer field of each downlink (master-slave) packet along with a preferably 6-bit Next Slot Pointer (NSP)... The resynchronisation pointer (RP) in the pointer field of each downlink (master-slave) packet indicates the number of remaining time slots before the

transmission of the broadcast beacon slot 42. In the preferred embodiment a 6-bit resynchronisation pointer is used, allowing the pointer to indicate up to 64 slots ahead--a longer pointer allows for longer superframes and vice versa (¶ 0022).

As to Claim 18, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 1.

Scanlon and Assarsson do not expressly disclose that the power conserving mode defines a low power consumption mode of a radio frequency operating part.

Mahany does expressly discloses that the microprocessor also controls the radio unit to accommodate communication with the either the main network (for main mode radios), the microLAN (for microLAN radios), or both (for dual mode radios) (¶ 0053, Fig. 3, elements 112, 120) Mahany discloses that the microLAN and main protocols are designed to provide for a low power mode or sleep mode during periods when no communication involving the subject transmitter is desired (¶ 0054) and further discloses that because of their relatively low battery energy, the computer terminal 170 and code reader 171 are designated microLAN slave devices and each contain a microLAN transceiver having a broadcast range of two meters or less. Because of its greater battery energy, the printer 172 contains a dual mode radio and is designated the microLAN master device (¶ 0057, Fig. 4, elements 170-172). In addition, the same motivation is used as in the rejection of Claim 1.

As to Claim 19, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 1.

Scanlon and Assarsson do not expressly disclose that at least one transmitter, the at least one receiver or combinations thereof may form part of a node comprising a transceiver arrangement.

Mahany does expressly teach "at least one transmitter, the at least one receiver or combinations thereof may form part of a node comprising a transceiver arrangement," where the transceiver 110 contains a radio unit 112 which attaches to an attached antenna 113. The radio unit 112 used in microLAN slave devices need only provide reliable low power transmissions, and are designed to conserve cost, weight and size. Potential microLAN master devices not only require the ability to communicate with microLAN slave devices, but also require higher power radios to also communicate with the main network. Thus, potential microLAN master devices and other non-microLAN slave devices might contain two radio units 112 (or two transceivers 110)--one serving the main network and the other serving the microLAN network--else only contain a single radio unit to service both networks (¶ 0049). In addition, the same motivation used in the rejection of Claim 1 is used.

As to Claim 20, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 1.

Mahany discloses the "communication system including at least two nodes, each comprising at least a transmitter, receiver or combinations thereof" in the rejection of Claim 19.

Mahany does not expressly disclose that the communication system is configured for wireless transmission.

Scanlon further discloses that the communication system is configured for wireless transmission where the personal area network (PAN) systems such as Bluetooth use time division techniques to reduce energy consumption of terminals. The RF transceiver is only operational when transmitting, receiving a correctly addressed packet, or inspecting the header of each packet transmitted by the master node in the network (¶ 0007).

Regarding Claim 21, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 1.

Scanlon and Assarsson do not expressly disclose selecting the time of transmission for a later signal randomly.

Mahany does expressly disclose "selecting the time of transmission for a later signal randomly," where instead of permitting every slave device from repeatedly transmitting immediately after an idle sense message is received, each waiting slave is required to first wait for a pseudo-random time period before attempting a transmission. The pseudo-random back-off time period is generated and the waiting takes place at a block 187. At a block 189, the channel

is sensed to determine whether it is clear for transmission (¶ 0058). In addition, the same motivation is used as in the rejection of claim 1.

Apparatus claim 22 is drawn to the apparatus corresponding to the method of using same as claimed in claim 1. The claim recites that the transition to the power saving state depends upon the message part indicative of a later signal hence Mahany teaches on the rejection of Claim 1 that the idle sense message received from the master denotes when the next message should be received and establishes conditions for how the slave should respond if the channel is determined to be idle or non-idle. The control means for performing a time control within the receiver is drawn to similar limitations claimed in method claims 9-13, since they relate to the operating modes of the receiver before and after transmission and receipt of a signal. Therefore, apparatus claim 22 corresponds to method claims 1, 9-13 and is rejected for the same reasons of obviousness as used above.

As to Claim 23, Scanlon, Assarsson and Mahany disclose a communication system as recited in Claim 22.

Scanlon discloses that "at least one transmitter and at least one receiver include means for timing," where the NSP introduces a higher level of control and enables the master to intelligently schedule slots on a packet-by-packet basis. Slaves normally transmit immediately following receipt of a downlink packet. The NSP, extracted from the header of the last downlink packet received, then indicates to the slave when to expect the next downlink (¶ 0035).

As to Claim 24, Scanlon, Assarsson and Mahany disclose a communication system as recited in Claim 22.

Scanlon discloses that "at least one transmitter and at least one receiver include means for timing," where the NSP introduces a higher level of control and enables the master to intelligently schedule slots on a packet-by-packet basis. Slaves normally transmit immediately following receipt of a downlink packet. The NSP, extracted from the header of the last downlink packet received, then indicates to the slave when to expect the next downlink. The slave simply enters sleep mode until that time (¶ 0035).

As to Claim 25, Scanlon, Assarsson and Mahany disclose a communication system as recited in Claim 22.

Scanlon and Assarsson do not expressly disclose at least one transmitter includes control means for switching between at least two modes of operation in dependence on a transmitted message part indicative of the time of transmission for the later signal.

Mahany does expressly disclose "at least one transmitter includes control means for switching between at least two modes of operation in dependence on a transmitted message part indicative of the time of transmission for the later signal," where before transmitting an idle sense message, the master listens to determine if the channel is idle. If the channel is idle, the master transmits an idle sense message 205 and then waits a time period 231 to determine if any devices desire communication. If no communication is desired, the master enters a power

conserving mode during a time period 233 before activating again to listen to the channel (¶ 0064, Fig. 6b) and further discloses that after sending or receiving data during the time period 219, the master device enters a power conserving mode during the time period 237 (¶ 0065, Fig. 6b).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the communication system of Scanlon and Assarsson with the control means of Mahany. The suggestion/motivation would have been in order to provide for a low power mode or sleep mode during periods when no communication involving the subject transmitter is desired (Mahany, ¶ 0054).

As to Claim 26, Scanlon, Assarsson and Mahany disclose a communication system as recited in Claim 24.

Scanlon and Assarsson do not expressly disclose at least two modes of operation define a normal operating mode and a power conserving mode.

Mahany does expressly disclose “at least two modes of operation define a normal operating mode and a power conserving mode,” where the slave device monitors an idle sense message of the master during a time period 209, determines that no servicing is required, and enters a power conserving mode during the time period 211. The slave then activates during a time period 213 to monitor the next idle sense message of the master (¶ 0061) where the activation is analogous to the normal operating mode.

Apparatus claim 27 is drawn to the apparatus corresponding to the method of using same as claimed in claim 18. Therefore, apparatus claim 27

corresponds to method claim 18 and is rejected for the same reasons of obviousness as used above.

As to Claim 28, Scanlon, Assarsson and Mahany disclose a communication system as recited in Claim 22.

Scanlon and Assarsson do not expressly disclose a battery power supply.

Mahany discloses "a communication system further comprising a battery power supply," where within the microLAN network, even though lower power transceivers are used, battery conservation issues also justify the use such data rate and power adjustments (¶ 0072).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the communication system of Scanlon with the battery power supply of Mahany. The suggestion/motivation would have been in order to optimally select the appropriate data rata and power level for subsequent transmissions using ranging and battery parameters (Mahany, ¶ 0072).

As to Claim 29, Scanlon, Assarsson and Mahany disclose a communication system as recited in Claim 22.

Scanlon and Assarsson do not expressly disclose a communication system comprising a control means for determining a lack of synchronicity and means for initiating a synchronization resumption process.

Mahany does expressly disclose "a communication system further comprising a control means for determining a lack of synchronicity and means for initiating a synchronization resumption process," where the slave device monitors

the idle sense messages during time periods 209 and 213 and enters a power conserving mode during time periods 211 and 215. For some reason, however, the master stops transmitting idle sense messages...During a time period 241, the slave unsuccessfully attempts to monitor an idle sense message. The slave then goes to sleep for a time period 243 and activates to attempt to monitor a next idle sense message during a time period 245, but is again unsuccessful (¶ 0066, Fig. 6c). Mahany further discloses the slave device thereafter initiates a binding protocol to attempt to regain synchronization with the master. While two time periods (241 and 245) are shown, the slave may initiate such a protocol after any number of unsuccessful attempts to locate an idle sense message. With this protocol, the slave stays active for a time period 247, which is equal to the time period from one idle sense message to the next, in an attempt to locate a next idle sense message (¶ 0067, Fig. 6c).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the communication system of Scanlon and Assarsson with the control means of Mahany. The suggestion/motivation would have been in order to enable the slave device to take over functionality of the master device in its absence (Mahany, ¶ 0068).

As to Claim 32, Scanlon, Assarsson and Mahany disclose a method of controlling the operation of transmitter and receiver as recited in Claim 5.

Scanlon does not expressly disclose receiving a confirmation signal from the receiver before bringing the transmitter into the power conserving mode.

Mahany does expressly disclose "receiving a confirmation signal from the receiver before bringing the transmitter into the power conserving mode," where when the slave activates again during a time period 217 to monitor the next idle sense message, it determines from a "request to send" type message from the master that the master has data transmission to the slave. The slave responds by sending a "clear to send" type message during the time period 217 and stays activated in order to receive transmission of the data. The master is thus able to transmit the data to the slave during a time period 219 (¶ 0061, Fig. 6a). Mahany further discloses that after sending or receiving data during the time period 219, the master device enters a power conserving mode during the time period 217 (¶ 0065, Fig. 6b). In addition, the same motivation is used as in the rejection of Claim 5.

As to Claim 33, Scanlon, Assarsson and Mahany disclose a method of controlling the operation of transmitter and receiver as recited in Claim 5.

Scanlon and Assarsson do not expressly disclose transmitting a confirmation signal before bringing the receiver into the power conserving mode.

Mahany does expressly disclose "transmitting a confirmation signal before bringing the receiver into the power conserving mode," where when the slave activates again during a time period 217 to monitor the next idle sense message, it determines from a "request to send" type message from the master that the master has data transmission to the slave. The slave responds by sending a "clear to send" type message during the time period 217 and stays activated in

order to receive transmission of the data. The master is thus able to transmit the data to the slave during a time period 219. Once the data is received by the slave at the end of the time period 221, the slave again enters a power conserving mode during a time period 223 (¶ 0061, Fig. 6a). In addition, the same motivation is used as in the rejection of Claim 5.

As to Claim 34, Scanlon, Assarsson and Mahany disclose a method of controlling the operation of transmitter and receiver as recited in Claim 33.

Scanlon and Assarsson do not expressly disclose waiting for a retransmission time before the power conserving mode.

Mahany does expressly disclose “waiting for a retransmission time before the power conserving mode,” where the slave responds by sending a "clear to send" type message during the time period 217 and stays activated in order to receive transmission of the data. The master is thus able to transmit the data to the slave during a time period 219. Once the data is received by the slave at the end of the time period 221, the slave again enters a power conserving mode during a time period 223 (¶ 0061, Fig. 6a). In addition, the same motivation is used as in the rejection of Claim 33.

As to Claim 35, Scanlon, Assarsson and Mahany disclose a method of controlling the operation of transmitter and receiver as recited in Claim 21.

Scanlon discloses that “the time of transmission is selected from a predetermined interval,” where the resynchronization pointer (RP) in the pointer

field of each downlink (master-slave) packet indicates the number of remaining time slots before the transmission of the broadcast beacon slot (¶ 0024).

Method claim 36 is drawn to the apparatus corresponding to the apparatus of using same as claimed in claim 26. Therefore, method claim 36 corresponds to apparatus claim 26 and is rejected for the same reasons of obviousness as used above.

5. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication 2003/0231607 to Scanlon et al ("Scanlon") in view of U.S. Patent Publication 2003/028685 to Mahany et al ("Mahany") and in further view of U.S. Patent 7,231,221 to Assarsson et al ("Assarsson") as applied to Claim 1 above and in further view of U.S. Patent 6,570,857 to Haartsen.

As to Claim 16, Scanlon, Assarsson and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 13.

Scanlon, Assarsson and Mahany do not expressly disclose altering the operating mode of the receiver until a communication has been established with the transmitter, and resuming normal operating mode thereafter.

Haartsen discloses "altering the operating mode of the receiver until a communication has been established with the transmitter, and resuming normal operating mode thereafter," where a unit in ACTIVE mode uses the master identity 303 and clock to keep synchrony to the FH (frequency hopping) channel and to extract the proper packets by filtering the packets with the proper preamble. In addition, it has a MAC address 305 to be recognized by the master.

Units that for a short moment can be put inactive will enter the HOLD mode. In this mode, the slave sleeps for a pre-determined period of time, after which it becomes active again. During the sleep mode, the slave cannot get access to the channel, nor can it be reached by the master (Col. 7, lines 44-53).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of controlling the operation of a transmitter and receiver of Scanlon, Assarsson and Mahany with the method of altering the operating mode of the receiver of Haartsen. The suggestion/motivation would have been in order to properly schedule the traffic, slaves that are in idle time between the messages are placed in the PARK mode, and slaves that need to exchange messages are in the ACTIVE mode (Haartsen, Col. 9, lines 44-47).

As to Claim 17, Scanlon and Mahany disclose a method of controlling a transmitter and receiver as recited in Claim 16.

Scanlon, Assarsson and Mahany do not expressly disclose altering the operating mode of the receiver unit to a long preamble mode.

Haartsen discloses "altering the operating mode of the receiver unit to a long preamble mode," where a slave in HOLD mode retains its MAC address 305. A slave that can be put inactive for a longer amount of time will enter the PARK mode. In this mode, a slave gives up the MAC address 305, thereby making that MAC address 305 available for assignment to another slave unit. The slave in PARK mode wakes up periodically to listen for the channel identifier

307 to adjust its clock to account for drifts. (Col. 7, lines 53-60). In addition, the same motivation is used as in the rejection of Claim 16.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EBONI GILES whose telephone number is (571)270-7453. The examiner can normally be reached on 7:30 AM - 5 PM, M-F, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ EBONI GILES/

Examiner, Art Unit 2611

/Mohammad H Ghayour/
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